

No.

9400216



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

DEKAR Genetics Corporation

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED, PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR PROPAGATING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE FOREGOING PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'CX478'

In Testimony Whereof, I have herewith set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this thirtieth day of November in the year of our Lord one thousand nine hundred and ninety-five.

Attest:

Marsha A. Stanton
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Earl F. Bickman
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE DIVISION

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(INSTRUCTIONS ON REVERSE)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) (as it is to appear on the Certificate) <u>DEKALB Genetics Corporation</u>		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO. <u>EX247</u>		3. VARIETY NAME <u>CX478</u>				
4. ADDRESS (street and no. or R.F.D. no., city, state, and ZIP) <u>3100 Sycamore Road</u> <u>DeKalb, IL 60115</u>		5. PHONE (include area code) <u>(815) 758-3461</u>		FOR OFFICIAL USE ONLY PVPO NUMBER <u>9400216</u>				
6. GENUS AND SPECIES NAME <u>Glycine max L. Merr.</u>		7. FAMILY NAME (Botanical) <u>Leguminosae</u>		FILING Date <u>July 1, 1994</u> Time <input type="checkbox"/> A.M. <input checked="" type="checkbox"/> P.M.				
8. CROP KIND NAME (Common Name) <u>Soybean</u>		9. DATE OF DETERMINATION <u>Summer 1991</u>		FEES Filing and Examination Fee: <u>\$ 2,325.00</u> Date <u>June 30, 1994</u> Certificate Fee: <u>\$ 300.00</u>				
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) <u>Corporation</u>				RECEIVED Date <u>Sept. 19, 1995</u>				
11. IF INCORPORATED, GIVE STATE OF INCORPORATION <u>Delaware</u>		12. DATE OF INCORPORATION <u>June 15, 1988</u>						
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS <table style="width:100%;"> <tr> <td style="width:50%;"> <u>Robert E. Roman, Jr.</u> <u>DEKALB Genetics Corporation</u> <u>3100 Sycamore Road</u> <u>DeKalb, IL 60115</u> </td> <td style="width:50%; text-align: center;"> & </td> <td style="width:50%;"> <u>R. Mark Lawson, Ph.D.</u> <u>DEKALB Genetics Corporation</u> <u>3100 Sycamore Road</u> <u>DeKalb, IL 60115</u> PHONE (include area code): <u>(815) 758-3461</u> </td> </tr> </table>						<u>Robert E. Roman, Jr.</u> <u>DEKALB Genetics Corporation</u> <u>3100 Sycamore Road</u> <u>DeKalb, IL 60115</u>	&	<u>R. Mark Lawson, Ph.D.</u> <u>DEKALB Genetics Corporation</u> <u>3100 Sycamore Road</u> <u>DeKalb, IL 60115</u> PHONE (include area code): <u>(815) 758-3461</u>
<u>Robert E. Roman, Jr.</u> <u>DEKALB Genetics Corporation</u> <u>3100 Sycamore Road</u> <u>DeKalb, IL 60115</u>	&	<u>R. Mark Lawson, Ph.D.</u> <u>DEKALB Genetics Corporation</u> <u>3100 Sycamore Road</u> <u>DeKalb, IL 60115</u> PHONE (include area code): <u>(815) 758-3461</u>						
14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow INSTRUCTIONS on reverse) a. <input checked="" type="checkbox"/> Exhibit A, Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B, Novelty Statement c. <input checked="" type="checkbox"/> Exhibit C, Objective Description of Variety d. <input type="checkbox"/> Exhibit D, Additional Description of Variety e. <input checked="" type="checkbox"/> Exhibit E, Statement of the Basis of Applicant's Ownership f. <input checked="" type="checkbox"/> Seed Sample (2,500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office _____ g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$2,325) made payable to "Treasurer of the United States"								
15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See section 83(a) of the Plant Variety Protection Act) <input type="checkbox"/> YES (If "YES," answer items 16 and 17 below) <input checked="" type="checkbox"/> NO (If "NO," skip to item 18 below)								
16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> YES <input type="checkbox"/> NO			17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED					
18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.? <input type="checkbox"/> YES (If "YES," through <input type="checkbox"/> Plant Variety Protection Act <input type="checkbox"/> Patent Act. Give date: _____). <input checked="" type="checkbox"/> NO								
19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETING IN THE U.S. OR OTHER COUNTRIES? <input checked="" type="checkbox"/> YES (If "YES," GIVE NAMES OF COUNTRIES AND DATES) <u>U.S.A., spring 1994</u> <input type="checkbox"/> NO								
20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable. The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in section 41, and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act. Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.								
SIGNATURE OF APPLICANT (Owner(s)) <u>R. Mark Lawson</u>		CAPACITY OR TITLE <u>Director, Research Operations</u>		DATE <u>6/29/94</u>				
SIGNATURE OF APPLICANT (Owner(s))		CAPACITY OR TITLE		DATE				

EXHIBIT A**Origin and Breeding History**
CX478

CX478 is an F₃ plant selection from the cross CX415 x NK S42-40.

Summer 1985	The cross CX415 x NK S42-40 was made.
Winter 1985-86	F ₁ generation was grown (range 1, row 38). F ₂ generation was grown (range 38, rows 1-4).
Summer 1986	F ₃ generation was grown (range 600, rows 5-20).
Summer 1987	Individual F ₄ plant rows were grown (range 274, row 25 through range 278, row 25). Range 278, row 5 was selected.
Summer 1988	F ₅ seed was yield tested.
Summer 1989	F ₆ seed was yield tested.
Summer 1990	F ₇ seed was yield tested and 120 pounds of seed was produced.
Summer 1991	F ₈ seed was yield tested and 119 bushels of breeder seed was produced.
Summer 1992	F ₉ seed was yield tested and 2,000 bushels of foundation seed was produced.
Summer 1993	F ₁₀ seed was yield tested and 9,800 bushels of registered seed was produced.
February 4, 1994	The F ₁₀ seed was given the variety name CX478.

Statement of Stability and Uniformity

Soybean variety CX478 has been judged to be uniform for breeding use and testing after seven generations of selfing. CX478 was reproduced and judged uniform and stable for an additional three generations.

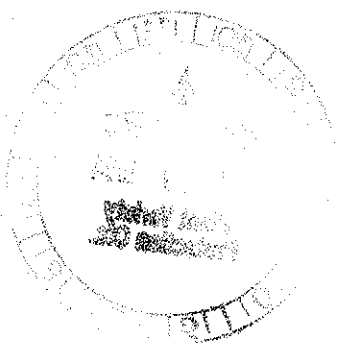
Statement of Variants

CX478 shows no variants other than what would normally be expected due to environment or that would occur for almost any characteristic during the course of repeated sexual reproduction.

EXHIBIT B

Novelty Statement

CX478 most closely resembles CX458; however, CX458 has brown pods and is susceptible to Race 3 phytophthora root rot whereas CX478 has tan pods and is resistant to Race 3 phytophthora root rot.



OBJECTIVE DESCRIPTION OF VARIETY

Soybean Variety CX478

APPLICANT: DEKALB Genetics Corporation 3100 Sycamore Road DeKalb, IL 60115

1. SEED SHAPE: Spherical
2. SEED COAT COLOR: (Mature Seed) Yellow
3. SEED COAT LUSTER: (Mature Hand Shelled Seed) Dull
4. SEED SIZE: (Mature Seed) 15 Grams per 100 seeds
5. HILUM COLOR: (Mature Seed) Black
6. COTYLEDON COLOR: (Mature Seed) Yellow
7. SEED PROTEIN PEROXIDASE ACTIVITY: High
8. SEED PROTEIN ELECTROPHORETIC BAND:
9. HYPOCOTYL COLOR: Green with bronze band below cotyledons
10. LEAFLET SHAPE: Ovate
11. LEAFLET SIZE: Medium
12. LEAF COLOR: Medium Green
13. FLOWER COLOR: White
14. POD COLOR: Tan
15. PLANT PUBESCENCE COLOR: Brown (Tawny)
16. PLANT TYPE: Bushy
17. PLANT HABIT: Indeterminate
18. MATURITY GROUP: IV

EXHIBIT C

CX478

Page two.

19. DISEASE REACTION: (0=Not Tested; 1=Susceptible; 2=Resistant)Bacterial Diseases:

Bacterial Pustule: 0
 Bacterial Blight: 0
 Wildfire: 0

Viral Diseases:

Bud Blight: 0
 Yellow Mosaic: 0
 Cowpea Mosaic: 0
 Pod Mottle: 0
 Seed Mottle: 0

Nematode Diseases:

Soybean Cyst Nematode

Race 1: 0
 Race 2: 0
 Race 3: 0
 Race 4: 0
 Other: 0

Lance Nematode: 0
 Southern Root Knot: 0
 Northern Root Knot: 0
 Peanut Root Knot: 0
 Reniform Nematode: 0
 Other: 0

Fungal Diseases:

Brown Spot: 0
 Frogeye Leaf Spot: 0
 Target Spot: 0
 Downy Mildew: 0
 Powdery Mildew: 0
 Brown Stem Rot: 0
 Stem Canker: 0
 Pod and Stem Blight: 0
 Purple Seed Stain: 0
 Rhizoctonia Root Rot: 0
 Phytophthora Rot

Race 1: 2
 Race 2: 0
 Race 3: 2
 Race 4: 0
 Race 5: 0
 Race 6: 0
 Race 7: 0
 Race 8: 0
 Race 9: 0

20. PHYSIOLOGICAL RESPONSES: (0=Not Tested; 1=Susceptible; 2=Resistant)

Iron Chlorosis on Calcareous Soil: 0
 Other: 0

21. INSECT REACTION: (0=Not Tested; 1=Susceptible; 2=Resistant)

Mexican Bean Beetle: 0
 Potato Leaf Hopper: 0
 Other: 0

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

<u>Character</u>	<u>Name of Variety</u>	<u>Character</u>	<u>Name of Variety</u>
Plant Shape	CX415	Seed Coat Luster	CX458
Leaf Shape	CX415	Seed Size	A3127
Leaf Color	CX415	Seed Shape	CX458
Leaf Size	CX458	Seedling Pigmentation	CX458

5

EXHIBIT C
CX478
Page three.

23. DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

VARIETY	NO OF DAYS MATURITY	PLANT LODGING SCORE	PLANT HEIGHT CM	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS /POD
				Width cm	Length cm	% Prot	% Oil		
CX478	145	2.0	106	--	--	33.9	19.7	15.2	2-3
CX458	143	1.5	106	--	--	35.2	18.7	18.1	2-3

EXHIBIT E**Statement of the Basis of Applicant's Ownership**

CX478 was originated and developed by a breeder employed by DEKALB Genetics Corporation. By agreement between DEKALB Genetics Corporation and the breeder, all rights to any invention, discovery, or development are assigned to DEKALB Genetics Corporation. No rights to such invention, discovery, or development are retained by the breeder.